

Application No.: 09/779,919

Docket No.: 47171-00265USPT
(PATENT)Remarks

Claims 1, 7, 24-25, 28, and 34-36 have been amended. Claims 1-39 are pending in the application.

A. §112 Objections

In the Office Action dated June 9, 2005, paragraph 5, claims 1-13, 25 and 28-31 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regarded as the invention. Claims 1, 25, and 28 were amended and it is believed that through these amendments, the objections to claims 1-12, 25, and 28-31 have been overcome.

1. *Claim 1 – “the master transmitted light value”*

Claim 1 was objected to as lacking an antecedent for the term “the master transmitted light value” at Line 17. Claim 1 has been amended to replace “one or more master transmitted light values” with “at least one master transmitted light value.” It is believed that such amendment provides a clearer antecedent for the term “the master transmitted light value.” This amendment does not narrow the scope of the claim. Accordingly, this rejection is believed to be overcome. Claims 2-12 depend on claim 1 and were rejected because claim 1 was rejected. Claims 2-12 are believed to be allowable given that claim 1 is allowable. Accordingly, it is respectfully requested that the rejections to claims 1-12 be withdrawn.

Claim 1 has also been amended to replace other instances of the phrase “one or more” with “at least one”. Such amendments do not narrow the scope of the respective claim terms.

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(PATENT)****2. Claim 13**

Claim 13 was listed in the rejected claims under 35 U.S.C. § 112, second paragraph, but no explanation for its rejection was given in the Office Action. It is respectfully requested that this rejection be withdrawn. To the extent that this rejection is not withdrawn, it is respectfully requested that an explanation be given for its rejection so that Applicants may be able to properly respond to the rejection.

3. Claim 25 – “the master reflected light value”

Claim 25 was objected to as lacking an antecedent for the term “the master reflected light value” in Line 5. In response, claim 25 has been amended to replace “the master reflected light value” with “a master reflected light value. Accordingly, this rejection is believed to be overcome, and it is respectfully requested that the rejection to claim 25 be withdrawn. This amendment does not narrow the scope of the claim.

Claim 15 has also been amended to replace “the master transmitted light value” with “a master transmitted light value” at lines 9-10. This amendment does not narrow the scope of the claim.

4. Claim 28 – “the bill”

Claim 28 was objected to as lacking an antecedent for the term “the bill” in Line 5. Claim 28 has been amended to replace “the bill transport mechanism” with “the document transport mechanism.” Accordingly, this rejection is believed to be overcome. This amendment does not narrow the scope of the claim. Additionally, claims 29-31 depend on claim 28 and were also rejected. Claims 29-31 are believed to be allowable given that claim 28 is allowable. Accordingly, it is respectfully requested that the rejections of claims 29-31 be withdrawn.

Additionally, in lines 3 and 6 of amended claim 28, three instances of “document”

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have been changed to "documents". Such amendments do not narrow the scope of claim 28. In line 9 of amended claim 28, "the test document" has been changed to "a test document" to provide a clearer antecedent. Such amendment does not narrow the scope of the claim.

Finally, claim 28 has generally been amended to replace instances of the term "connected" with the term "coupled" to make even more clear that indirect as well as direct connections are encompassed by the claim. Such amendments do not narrow the scope of the claim.

Other Claim Amendments

Claim 7 has been amended to introduce the word "system" so as to correspond to the language of claim 1 from which claim 7 depends. This amendment does not narrow the scope of this claim.

Claim 24 has also been amended to replace some instances of the phrase "one or more" with "at least one". Such amendments do not narrow the scope of the respective claim terms. Additionally, "a master reflected light value" has been changed to "at least one master reflected light value" and "a master transmitted light value" has been changed to "at least one master transmitted light value." Such amendments do not narrow the scope of the claim.

Claim 34 has been amended to replace an instance of the term "connected" with the term "coupled" to make even more clear that indirect as well as direct connections are encompassed by the claim. Such amendment does not narrow the scope of the claim. Also claim 34 has been amended to change "the test document" at the second to last line of amended claim 34 to "a test document" to provide a clearer antecedent. Such amendment does not narrow the scope of the claim.

Claim 35 has been amended at line 5 of the amended claim to change "test document"

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to "test currency bill". Such amendment does not narrow the scope of the claim as line 3 of claim 35 already referred to "a test currency bill."

Claim 36 has been amended at line 5 of the amended claim to change "bill transport mechanism" to "currency transport mechanism" so as to agree with the terminology used at line 3. Such amendment does not narrow the scope of the claim. Claim 36 has generally been amended to replace instances of the term "connected" with the term "coupled" to make even more clear that indirect as well as direct connections are encompassed by the claim. Such amendments do not narrow the scope of the claim. At lines 21-22 of amended claim 36, two instances of "a" have been replaced with "at least one." Such amendments do not narrow the scope of the claim. At lines 22-23, "the type of the test currency bill" has been replaced with "at least one type of test currency." Such amendment does not narrow the scope of the claim. At line 27, "the test currency bill" has been changed to "a test currency bill" to provide a clear antecedent. Such amendment does not narrow the scope of the claim. To enhance the readability of the claim, "one currency" has been changed to "one currency bill" at line 39. Such amendment does not narrow the scope of the claim.

B. §103 Rejections based on Laskowski, and Carnes, Jr. et al.

In the Office Action, paragraph 7, claims 1-4, 6-9, 13-15, 18 and 21-39 were rejected under 35 U.S.C. 103(a) as being unpatentable over Laskowski (U.S. Patent No. 5,923,413, hereinafter "Laskowski '413") in view of Carnes, Jr. et al. (hereinafter Carnes) (3,976,198). These rejections are respectfully traversed.

Claim 1

With respect to claim 1, the Office Action asserted that Laskowski '413 discloses all

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features of claim 1 except that "Laskowski ['413] does not explicitly disclose the presence of more than one document as the reason to be unfit to use." Carnes is then cited as teaching using transmitted light to detect the presence of more than one document.

First, it is pointed out that the prior comments regarding Laskowski addressing the detection of double bills made in response to the Office Action dated September 27, 2004 were made with respect to U.S. Patent No. 6,101,266, the "Laskowski '266 patent." As stated before, the Laskowski '266 patent, which is a continuation of Laskowski '413, does in fact address the detection of double bills. See e.g., Laskowski '266, col. 2, ll. 12-14; col. 4, ll. 49-55; col. 10, l. 31; and col. 16, l. 13 – col. 17, l. 7.

Second, it is respectfully submitted that despite the assertions to the contrary, Laskowski '413 fails to teach or suggest at least the following limitations of claim 1:

a processor adapted to ...

(3) calculate a reflectance ratio between the reflected light value of the test document and the master reflected light value, ...

(6) adjust the master transmitted light value based on the reflectance ratio,

(7) compare the adjusted master transmitted light value to the transmitted light value for the test document, and

(8) generate a doubles signal if the comparison of the adjusted master transmitted light value with the transmitted light value for the test document indicates that more than one document is present.

As Carnes also fails to teach or suggest these features, it is submitted that a *prima facie* case of obviousness has not been established.

For example, the Office Action states Laskowski '413 discloses "a doubles detection system for detecting doubled documents" comprising, inter alia, a processor adapted to "(3) calculate a reflectance ratio between the reflected light value of the test document and the master reflected light value." In support thereof, the Office Action cites Figure 4; Column 7, Lines 51-67, Column 8, Lines 1-42; Figure 13; Column 18, Lines 66-67, Column 19, Lines 1-

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32 of Laskowski '413. However, none of these portions of Laskowski '413 teach or suggest calculating a reflectance ratio between reflected light value(s) of a test document and master reflected light value(s). Figure 4 relates to the correlation of a set of sensed data values with previously stored value sets (col. 5, ll. 7-11) presumably using the formula shown in Figure 5. Likewise, nothing at column 7, line 51 – column 8, line 42 teaches or suggests calculating the recited ratio. The same is true for Figure 13 and column 18, line 66 – column 19, line 42.

The Office Action on page 2, ¶3 concludes that the “formula in Column 8 Lines 19-23 clearly indicates the ration [sic, ratio] between (x) and (y) data.” The formula cited at col. 8, ll. 20-24 of Laskowski '413 is as follows:

$$C_{xy} = \frac{\sum (x_i - \mu_x)(y_i - \mu_y)}{\sigma_x \sigma_y}$$

C_{xy} is a correlation coefficient. Laskowski '413, col. 8, l. 25. As noted in the Office Action on page 2, ¶ 3, the sensed value set 38 of Figure 4 is considered to be the (x) data which are the 12 reflectance values and the 12 transmitted values for the test document. That is, the (x) data includes both transmitted and reflected light data. Also as noted in the Office Action, the stored value set 42 of Figure 5 [and 40 of Figure 4] are considered to be the (y) data. The (y) data is recognized in the Office Action as comprising both reflected light and transmitted light data.

Accordingly, the conclusion in the Office Action on page 2, ¶3 that the “formula in Column 8 Lines 19-23 clearly indicates the ration [sic, ratio] between (x) and (y) data” is respectfully traversed. First, it is clear from the above that the C_{xy} formula is not a ratio between (x) and (y). Secondly, it is not even clear if a ratio between (x) and (y) is derivable from this formula. Finally, whether this formula discloses a ratio between (x) and (y) is

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irrelevant with respect to the claimed limitation of *e.g.*, claim 1 which recites: "(3) calculat[ing] a reflectance ratio between the reflected light value of the test document and the master reflected light value." As noted in the Office Action, both (x) and (y) are data sets including both transmitted and reflected light values. Thus even if the formula at Col. 8, ll. 19-23 disclosed a ratio of a collection of transmitted and reflected values from a test document to a collection of transmitted and reflected values from a stored data set, it still fails to teach or suggest calculating "a reflectance ratio between the reflected light value of the test document and the master reflected light value" recited in claim 1.

Given that Laskowski '413 fails to teach or suggest (3) calculating "a reflectance ratio between the reflected light value of the test document and the master reflected light value," it follows that it also fails to teach or suggest the other above limitations, namely,

(6) adjust the master transmitted light value based on the reflectance ratio,

(7) compare the adjusted master transmitted light value to the transmitted light value for the test document, and

(8) generate a doubles signal if the comparison of the adjusted master transmitted light value with the transmitted light value for the test document indicates that more than one document is present.

The portions of Laskowski '413 cited in the Office Action as disclosing these limitation do not in fact disclose such limitations. For example, with respect to "(6) adjust[ing] the master transmitted light value based on the reflectance ratio," the Office Action cites Col. 8, ll. 60-67 of Laskowski '413. However, this portion of Laskowski '413 together with that at Col. 8, ll. 50-59 merely discloses the multiplicative property that the order in which numbers are multiplied together does not change the result of the multiplication. Thus these portions state with respect to Figure 6, (A) you can calculate C_{xy} by multiplying together eight correlation values derived from each of the eight stored value sets 46, or alternatively, (B) you can calculate the same C_{xy} value by (B1) first multiplying the four correlation values derived from

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the four reflectance value sets 46, (B2) then multiplying the four correlation values derived from the four transmission value sets 46, and (B3) finally multiplying the two resulting correlation values together. In particular, nothing is even suggested with respect to B1 and B2 other than to multiple them together to obtain C_{xy} . As discussed above, the formula for calculating the correlation coefficient still fails to teach or suggest adjusting a master transmitted light value for a test document based on a reflectance ratio calculated between a reflected light value for a test document and a master reflected light value.

Likewise Figure 4 of Laskowski '413 and col. 7, l. 50 – col. 8, l. 67 fails to teach or suggest “(7) compar[ing] the adjusted master transmitted light value to the transmitted light value for the test document” Finally, Laskowski '413 at col. 4, ll. 14-22 and col. 21, ll. 23-27 fails to teach or suggest “(8) generat[ing] a signal if the comparison of the adjusted master transmitted light value with the transmitted light value for the test document indicates that the document is unfit for use” as indicated on page 4 of the Office Action let alone “(8) generat[ing] a doubles signal if the comparison of the adjusted master transmitted light value with the transmitted light value for the test document indicates that more than one document is present” as recited in claim 1. Laskowski '413 fails to teach or disclose the adjusted master transmitted light value and hence does not teach or suggest any comparison to such a value for any purpose.

It is not even suggested that Carnes teaches or suggests these limitation, and in fact, Carnes fails to teach or suggest these limitations.

MPEP §2143.03 instructs that “[t]o establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 409 F.2d 981, 180 USPQ 580 (CCPA 1974).” Thus, because the applied art does not teach or suggest **all the claim limitations**, Applicants respectfully assert that the Office Action has

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not established a *prima facie* case of obviousness for claim 1. Accordingly, it is respectfully requested that the rejections of these claims be withdrawn.

Other Independent Claims

Claim 13 recites, *inter alia*, the following limitations:

- calculating a reflectance ratio between a master reflected light value and the reflected light value for the test document;
- adjusting a master transmitted light value based on the reflectance ratio;
- comparing the adjusted master transmitted light value to the transmitted light value for the test document; and
- generating a doubles signal if the comparison of the adjusted master transmitted light value with the transmitted light value for the test document indicates that more than one document is present.

For reasons similar to those discussed above, neither Laskowski '413 nor Carnes teach the above limitations, and hence, claim 13 is allowable.

Claim 21 recites, *inter alia*, the following limitation:

- the processor being adapted to access the master transmitted light value and adjust the master transmitted light value for the test document based on the reflected light signal for the test document.

Claims 32 and 34 contains similar language. For reasons similar to those discussed above, neither Laskowski '413 nor Carnes teach the above limitation, and hence, claims 21, 32 and 34 are allowable.

Claim 24 recites, *inter alia*, the following limitations:

- a processor adapted to...
- (3) calculate a reflectance ratio between the reflected light value of the test document and the master reflected light value,...
- (6) adjust the transmitted light value for the test document based on the reflectance ratio,
- (7) compare the adjusted transmitted light value for the test document to the master transmitted light value, and
- (8) generate a doubles signal if the comparison of the adjusted

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transmitted light value for the test document with the master transmitted light value indicates that more than one document is present.

Method claim 25 recites similar acts as (3), (6), (7), and (8) of claim 24. For reasons similar to those discussed above, neither Laskowski '413 nor Carnes teach the above limitations, and hence, claims 24 and 25 are allowable.

Claim 26 recites, *inter alia*, the following limitations:

a processor adapted to...
calculate a reflectance ratio based on the reflected light signal and the master reflected light value; and
adjust the master transmitted light value based on the reflectance ratio.

Method claims 27 and 35 recites similar language (except for the processor language). For reasons similar to those discussed above, neither Laskowski '413 nor Carnes teach the above limitations, and hence, claims 26, 27 and 35 are allowable.

Claim 28 recites, *inter alia*, the following limitations:

a processor adapted to...
(4) calculate a reflectance ratio based on the reflected light value for the test document and the master reflected light value associated with the type of the test document;...
(7) adjust the master transmitted light value based on the reflectance ratio,
(8) compare the adjusted master transmitted light value to the transmitted light value for the test document, and
(9) generate a doubles signal if the comparison of the adjusted master transmitted light value with the transmitted light value for the test document indicates that more than one document is present; and
an operator interface electrically coupled to the processor and adapted to receive the doubles signal and indicate the receipt of a doubles signal.

Claim 36 contains similar language. For reasons similar to those discussed above, neither Laskowski '413 nor Carnes teach the above limitations, and hence, claims 28 and 36 are allowable.

To the extent that any of the above rejections are maintained, the Applicants respectfully request the Examiner to clearly explain at least how a reflectance ratio between a

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reflected light value(s) of a test document and a master reflected light value(s) can be obtained from the formula of C_{xy} of Laskowski '413 at col. 8, lines 19-36.

All of the rejected claims are allowable at least for the above reasons; and therefore, they will not be discussed in detail individually at this time. Suffice it to say that Applicants do not agree with the proposed grounds of obviousness recited in the Office Action nor do they agree with or accept the purported official notice. To the extent these rejections are not withdrawn, it is respectfully requested that prior art be cited in lieu of any official notice so that Applicants may be able to properly respond to the reference. Applicants respectfully submit that, as instructed in MPEP 2144.03A,

[i]t would not be appropriate for the examiner to take official notice of facts without citing a prior art reference where the facts asserted to be well known are not capable of instant and unquestionable demonstration as being well-known, ..., [i]t is never appropriate to rely solely on "common knowledge" in the art without evidentiary support in the record, as the principle evidence upon which a rejection was based. *Zurko*, 258 F.3d at 1385, 59 USPQ2d at 1697.

Applicants respectfully submit that since none of the prior art of record teaches or suggests the calculation of a reflectance ratio, then it is *not* appropriate for the Examiner to take official notice that the calculation of the reflectance ratio is well known as a "normalization" process.

C. §103 Rejections based on Laskowski, Carnes, Jr. et al., and Cargill et al.

In the Office Action, paragraph 4, claim 5 was rejected under 35 U.S.C. §103(a) as being unpatentable over Laskowski '413 further in view of Carnes, Jr. et al. and Cargill et al., (U.S. Patent No. 5,430,664). This rejection was respectfully traversed in the response to the September 27, 2004 Office Action, but claim 5 was rejected again in the June 3, 2005 Office Action without addressing Applicants' original arguments. This rejection is again

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respectfully traversed for the reasons provided in the prior response and above. Furthermore, the asserted teaching or motivation for the proposed combination presented in the Office Action can not be found in the cited references. Rather, it is maintained that the asserted combination is impermissibly based on hindsight and, hence, is improper. Accordingly, claim 5 is allowable and it is respectfully requested that this rejection be withdrawn.

D. Objected to Claims

In the Office Action, claim 10-12, 16, 17, 19 and 20 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

These claims are believed to be allowable given that the independent claims on which they depend are believed to be allowable for the reasons discussed above. Accordingly, it is respectfully requested that these objections be withdrawn.

Conclusion

It is the Applicants' belief that all of the claims are now in condition for allowance, and action towards that effect is respectfully requested. It is believed that no fee is presently due; however, should any additional fees be required (except for payment of the issue fee), the Assistant Commissioner is authorized to deduct the fees from Jenkins & Gilchrist, P.C. Deposit Account No. 10-0447, Order No. 47171-00265USPT.

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If there are any matters, which may be resolved or clarified through a telephone interview, the Examiner is requested to contact the undersigned attorney at the number indicated.

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Respectfully submitted,



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